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North versus South : Perception of New Jersey Dialects

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North versus South: Perception of New Jersey Dialects

by

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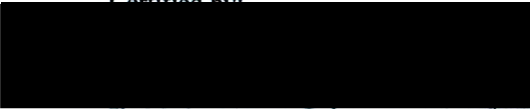
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Abstract

Previous studies have found marked differences among regional dialects amidst both large and small geographic locations. This study expands upon previous work on the perception of dialectical differences between Northern and Southern New Jersey. According to previous research, a major dialect boundary splits New Jersey into the two regions of Northern and Southern New Jersey. These two dialects have been found to be influenced by the New York City and Philadelphia dialects, respectively. In this study, a set of 28 talkers (14 male, 14 female) with an even amount from Northern and Southern New Jersey provided sentence-length speech samples which permitted comparisons of various dialect markers. Listeners were given a task where they were asked to identify if a talker was from Northern or Southern New Jersey based on the listener's perception of the talker's dialect. The task included two conditions (4 talkers vs. 12 talkers) and included Recognition, Test, and Generalization phases. Overall, listeners were able to identify dialect region for speech samples when provided with previous exposure to the dialect. Listeners made significantly more correct answers in the 4 talker condition than the 12 talker condition. It was also found that listeners' scores improved as they progress through the first Recognition and Test phases of the identification task but decreased when performing the Generalization phase. These findings indicate that the subtle and variable differences in the dialect markers for Northern and Southern New Jersey are apprehended by listeners and can affect a listener's judgment of a talker.

NORTH VERSUS SOUTH: PERCEPTION OF

NEW JERSEY DIALECTS

A THESIS

Submitted in partial fulfillment of the requirements
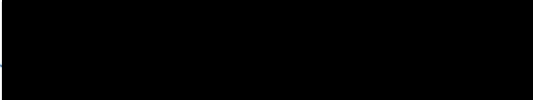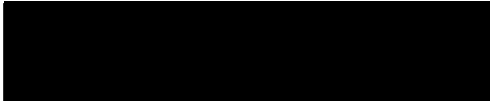
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TABLE OF CONTENTS

ACKNOWLEDGMENTS

North versus South: Perception of New Jersey Dialects

Often unnoticed by the speaker, everyone's speech is impacted by their regional dialect. Within the United States there are several regional dialects including the Southern, Northern, Western, and Mid-Atlantic dialects (Clopper & Pisoni, 2006a). Within these large regions there are subsets of dialects that even further divide the nations speech patterns. One area that has had considerable research is the Northeast, which contains several different regional dialects including the Mid-Atlantic, New York City, and New England dialects (Clopper & Pisoni, 2006a; Labov, Ash, & Boberg, 1997). New Jersey is unique in that, although geographically small, this densely populated state contains two dialect regions: the Mid-Atlantic dialect towards the Southern end of New Jersey, and the New York City dialect towards the Northern end of New Jersey (Labov, Ash, & Boberg, 2006).

Dialectal Variation

The differences between the Northern New Jersey and the Southern New Jersey dialects are subtle. The greatest influence on the Northern New Jersey dialect comes from New York City. Labov, Ash, & Boberg (2006) went into great detail describing their findings on the New York City dialect. They found several short vowels that merge towards long vowel sounds that are distinct to New York City. These include /ɛ/ (*head*) merging towards /ɛi/ (*bait*), /ae/ (*had*) merging towards /ɑu/ (*bout*), /ʌ/ (*hut*) merging towards /ʌu/ (*boat*), and /ɑ/ (*hot*) merging towards /ɑi/ (*bite*).

Labov, Ash, & Boberg (2006) also found that most New York City residents drop post-vocalic /r/ in words such as *fourth* or *floor*. This dialectal quality has been found to be influenced by demographic features. Labov (1966) tested to see if economics had an

1

influence on the dropping of post-vocalic /r/ in New York City. He found that people who worked in stores with employees and customers of a higher socioeconomic status were more likely to exhibit post-vocalic /r/ than those of a lower socioeconomic status. It was also found that non-white talkers were more likely to drop post-vocalic /r/ in speech than white talkers. Labov (1966) as well as other researchers have also found that young college-educated residents are more likely to pronounce post-vocalic /r/ but only when they are speaking carefully (Clopper & Pisoni, 2006a). In most casual speech however, New York City residents tend to leave out post-vocalic /r/.

The New York City dialect has a split short-*a* system of tense and lax words with the /ae/ phoneme. The tensing of the vowel leads to the word *jab* sounding like *jeb*. The laxing of /ae/ makes the vowel stronger. Tensed /ae/ words in the New York City dialect have the /ae/ phoneme followed by a voiced stop (*jab*), a front nasal (*planning*), or a voiceless fricative (*calf*). The vowel is lax before voiceless stops (*chap*), or liquids (*pal*). There are several specified tense and lax words that follow different rules in the split short-*a* system for New York City. These rules are that auxiliary and weak words, such as *can, have,* and *had,* are lax, and short-*a* words followed by voiced fricatives, such as *magic* and *imagine*, are frequently tensed (Labov, Ash, & Boberg, 2006).

Southern New Jersey receives its dialectal influence from Philadelphia, Pennsylvania (Labov, Ash, & Boberg, 2006). A prominent feature of the Philadelphia dialect is that back upgliding vowels tend to be fronted except before liquid consonants (*r, l, w, y*). These vowels include /u/ (*hoot*), /au/ (*bout*), and /ɛi/(*bait*). Extreme fronting was also found for the vowels /o/ (*boat*), /u/ (*hoot*), and /ɛ/ (*head*) (Labov, Ash, & Boberg, 1997; Labov, Rosenfelder, & Fruehwald, 2013). There is also a raising of /ae/

(*had*) and an extreme fronting of /ɔ/ (*caught*). The vowels /ɛ/ and /ʌ/ merge before an intervocalic /r/, such as *ferry* and *furry* or *lore* and *lure* (Labov, Ash, & Boberg, 2006).

Philadelphia has a split short-*a* system that differs from that of the New York City dialect. Most noticeable is the tensing of /æ/ in words where the vowel is followed by front nasals (*fan*) and voiceless fricatives (*bathroom*). There is also a unique quality to the Philadelphia dialect because there are only three words where the tensed /æ/ is followed by /d/: *mad, bad,* and *glad*. Words that have a lax /ae/ in the Philadelphia dialect are words where the vowel precedes a voiced stop (*bag*) or a nasal consonant (*ceramic*) (Labov, Ash, & Boberg, 2006). The current research will use the dialectal differences of New York City and Philadelphia within the respective regions of New Jersey to observe people's abilities to discriminate and perceive these dialects.

Perception of Dialect

Research has studied dialect differences from global to regional dialects. Van Bezooijen & Gooskens (1999) conducted a study in the Netherlands where participants categorized dialects by country, region, and province. Country dialect differences were conducted between the Netherlands and the Dutch-speaking areas of Belgium, and the region and province dialect differences used dialects from the Netherlands and the United Kingdom. The researchers found that the highest levels of accuracy occurred with country dialect identification and the lowest when discriminating by province. This shows that when the region of study decreases in size, the ability to discriminate between dialects decreases as well. Even within large geographical areas though, distinct dialect differences can be identified.

3

Research by Kirk et al. (2013) examined if people could discriminate between Standard Scottish English (SSE) and Dundonian Scots, a subset dialect of SSE. The researchers included a familiarization task prior to the identification task regardless of whether or not the participants had previous exposure to these dialects. It was found that participants without exposure to the dialects prior to the experiment performed above chance on the dialect identification task. Those with previous exposure to these dialects had even higher performance levels on the dialect identification task. The participants not only showed an above chance ability to discriminate between Dundonian Scots and SSE, but they also showed that with previous exposure they score even higher (Kirk et al., 2013), thereby suggesting that increased exposure to a dialect improves identification abilities. This study examined two specific dialects within a country, but there can be a more than two dialects within one country.

Clopper & Pisoni (2007) conducted a country-wide dialect identification task in which participants were asked to make free classifications of talker dialects. Participants were asked to locate the origin of dialects within the United States but were not given specified regions. Listeners were exposed to 66 male talkers whose sound files were presented all at once as tiles on a computer screen that the listener could press to play. The listeners were then allowed to pick any area of the United States in which they believed the dialect originated and make as many regional groupings as they liked. On average the listeners placed the talkers into 10 different dialect groups. They were also found to be able to make more distinct classifications when given a free classification system rather than a constrained list of regions. This suggests that without location prompts, people are still able to make fine dialect distinctions.

While the average listener could make dialect distinctions across the country, the range of places a person has lived has been shown to influence one's ability to make regional dialect identifications. Work by Clopper & Pisoni (2006b) examined this trend using a word corpus they had previously developed (Clopper & Pisoni, 2006a). Talkers from six dialect regions determined by the researchers were recruited to provide recordings of individual words, sentences, speech passages, and interview speech to develop a corpus of the American English dialects. This was created to be a nationwide corpus that other researchers could use in their studies (Clopper & Pisoni, 2006a). In their research utilizing this corpus, Clopper & Pisoni (2006b) had participants from different regions of the United States listen to the talkers that comprised the Nationwide Speech Project to see if there was a difference in a person's ability to locate the origin of a dialect if the listener had lived in multiple locations or one location. Listeners would listen to a sentence from a talker and then pick which of the six dialect regions they believed that talker was from. Overall it was found that listeners who had lived in multiple locations were able to distinguish more variations in dialects than those who had only lived in one location.

A previous study by Clopper & Pisoni (2004a) also examined the number of a person's previous residences and their ability to locate a dialect region. Specifically, the researchers were assessing if there was a difference in accuracy between listeners who had lived in at least three states as a child and listeners who had only lived in one state. This study had participants listen to sentences of people from six different dialect regions. Examples of the sentences used in this study were "She had your dark suit in the greasy wash water," and "Don't ask me to carry an oily rag like that." Sentences were presented

in three blocks with the first two blocks having every talker say the same sentence and the last block having the talkers say a novel sentence. Listeners were not given feedback on the correctness of their response. It was found that those who had lived in multiple locations as a child were better at making dialect discriminations than those who had only lived in one state. Furthermore, listeners who had lived in multiple dialect locations were better at locating dialects of regions they had previously lived in rather than those where they had not lived. These findings suggest that the more often a listener is exposed to a dialect, the easier it becomes for them to differentiate it from a similar dialect.

Research has been conducted to see if it is easier to determine if two talkers are from the same region or a different region (Clopper, Levi, & Pisoni, 2006). Listeners were presented with 32 talkers with each talker saying a different sentence. The listeners would hear two talkers and were then asked to determine if they were from the same or different regions. The answers were scored on a rating scale with 1 being "Not at all likely" and 7 being "Very likely." It was found that sentences in talker pairs from the same dialect region were rated as more similar than those pairs from different dialect regions.

Research has also explored whether the amount of talkers presented in a task has an effect on a person's ability to make dialect discrimination. Clopper & Pisoni (2004b) conducted a study where they had participants categorize sentences provided by eleven talkers from each of the six dialect regions of the United States. There were two listening conditions: a one-talker group and a three-talker group. In the one-talker condition, one talker from each dialect region was used. Three-talkers from each dialect region were used in the three-talker condition. These talkers were used in the training and test phases

of the experiment. The remaining talkers' sentences were used in the generalization phase. There were three blocks of the training phase and a block each for the test and generalization phases. Feedback was provided after each trial in the training phase but was not given for the test or generalization phases. In the first two blocks of the training phase the talkers would hear one sentence per talker. The sentences for the first two training blocks were the same as those from Clopper & Pisoni (2004a) (see Appendix A, sentences 31 and 32, respectively). The sentences were repeated ten times for each talker in the one-talker group and five times for each talker in the three-talker group. In the last training block and the test phase, each talker presented four novel sentences. In the generalization phase the remaining talkers for each condition were presented saying one novel sentence. It was found that the one-talker group was better at dialect identification in the training and test phases but the three-talker group was significantly better at the generalization phase. It is believed that it was easier to only match one talker to one dialect rather than three talkers to one dialect. It is also believed that the increased exposure to dialects in the three-talker condition increased the listeners' ability to generalize and correctly identify the dialect of a novel talker. It appears that a greater exposure to multiple speakers of a dialect increases one's ability to determine dialects in others.

While regional differences form a person's dialect, other demographic factors influence it as well. In a study by Eckert (1989), the researcher examined the effect of sex and gender on one's ability to identify dialects. The experiment was conducted with a graduating class of high school students from Detroit. Interviews were conducted with these high school students and the researcher later evaluated the phonological qualities of

their speech. Overall it was found that males exhibited more unique regional dialect qualities than females. Dialect is fluid; it is always changing over time. The researcher found that older dialectal changes were more noticeable in female speech, while newer dialect changes were most noticeable in male speech. Clopper, Levi, & Pisoni (2006) also found gender distinctions in their research. Listeners were aware of talker gender when making judgments on dialect similarities and were better at detecting similar dialects in same-sex pairings of talkers than mixed-sex pairings. These findings, along with others (Labov, 1966), exhibit that there are more factors than just location that influence our speech.

Previous research conducted by Apfelbaum (2013) served as a starting point for the current study. Apfelbaum (2013) dedicated a portion of his research to participants' ability to discriminate between Northern and Southern New Jersey dialects. Participants were presented with audio recordings of bisyllabic words and were asked to decide if the talkers were from Northern or Southern New Jersey. Participants were given a map showing the areas encompassing these two regions. Word recordings were picked from previously recorded talkers based on the locations in which they lived as reported in their demographics. The findings in this study were below chance. Participants were discriminating between Northern and Southern New Jersey but were making more incorrect than correct answers in the task. This shows that people are able to make the distinction between these two dialects, however they may not be able to correctly locate the region of dialect origin.

Experiment Overview

The current research expands upon the work of Apfelbaum (2013) and serves as a conceptual replication of Clopper & Pisoni (2004b). The current study will conduct a dialect identification task using the Northern and Southern regions of New Jersey. This task will be similar to that used by Apfelbaum (2013) but will also implement the methodology of Clopper & Pisoni (2004b). The current research will use sentences (Clopper & Pisoni, 2004b) instead of words (Apfelbaum, 2013) and the number of sentences and talkers will vary in the two conditions of this study (Clopper & Pisoni, 2004b).

In the current study, the researchers will examine if people can make dialectal identifications between the Northern and Southern New Jersey dialects. The researchers designated Northern New Jersey as an area within a 30 mile radius of New York City. Southern New Jersey was designated as the area of New Jersey south of the town of Trenton.

The researchers hypothesized that people would be better able to discriminate dialects when given full length sentences with words that exhibit the dialectal differences of Northern and Southern New Jersey. This will expand upon the design of Apfelbaum's (2013) experiment which used isolated words that did not explicitly contain regional dialect differences. It is hypothesized that the increased exposure to a talker's speech will increase a person's ability to determine the talker's location based on the talker's speech patterns. It is also hypothesized that using words exhibiting dialect differences will also increase one's abilities to identify regional dialects. This study will utilize talker conditions similar to that of Clopper & Pisoni (2004b) with one condition of 4 talkers

saying 12 sentences and one condition of 12 talkers saying 4 sentences. It is hypothesized that a difference will exist between the two talker conditions in the dialect identification task. This study will also include a similar task containing Recognition, Test, and Generalization phases with feedback in the Recognition phases. It is hypothesized that including the Recognition and Test phases will increase one's ability to later generalize dialect identification. Based on the findings of Clopper & Pisoni (2004b), it was also hypothesized that dialect identification in the 4 talker condition will be greater in the Recognition and Test phases, and identification in the 12 talker condition will be greater in the Generalization phase.

The current research uses a corpus that spans the eight cardinal vowels of American English. These vowels are /i/ (*heed*), /I/ (*hid*), /ɛ/ (*head*), /ae/ (*had*), /ɑ/ (*hot*), /ɔ/ (*caught*), /ʌ/ (*hut*), and /u/ (*hoot*). From a total of ten monosyllabic and ten bisyllabic words for each vowel, a set was collected with each category containing five high frequency words and five low frequency words. This set of words was used to generate 30 sentences. The two sentences from Clopper & Pisoni (2004a) were used as well.

Methods

Participants

 Talkers

Participants from Northern and Southern New Jersey were recruited over winter break prior to the beginning of the semester. Participants were recruited through a campus-wide e-mail. To be eligible for the study participants had to have spent their winter break in the region of their home in either Northern or Southern New Jersey.

These participants were asked to provide recordings of words and sentences. There were a total of 28 participants ranging between ages 18 and 24. 14 participants were from Northern New Jersey and 14 were from Southern New Jersey, with 7 male and 7 female participants in each condition. Participants had to be native English speakers (speaking fluent English since Kindergarten) and have normal hearing and speech. These participants received monetary compensation of $10 per hour.

Listeners

A second set of participants were recruited through a student recruitment website. Some participants from the set of talkers also participated in this session of the experiment making the total number of participants 54 (ages 18-26). These participants were also required to be native English speakers (fluent in English since Kindergarten) and have normal hearing and speech. Participants received compensation of $10 per hour.

Materials and Procedures

Corpus Development

Eight vocalic differences identified by Labov, Ash, & Boberg (2006) were used to develop the corpus. Along with these eight vowels, two other phonetic differences identified by Labov, Ash, & Boberg (2006) were included in the corpus. These were the short-*a* split difference between New York City and Philadelphia, and the dropping of post vocalic-r that is present in New York City.

A corpus spanning the eight cardinal vowels of English was developed for this study. These vowels were shown to exemplify the dialect differences between Northern and Southern New Jersey (Labov, Ash, & Boberg, 2006). Words exhibiting the phonetic

differences of the short-*a* split and the dropping of post-vocalic /r/ (Labov, Ash, & Boberg, 2006) were also utilized. The final word corpus contained a total of 254 words. This set of words was used to generate 30 sentences. The two sentences mentioned prior from Clopper & Pisoni (2004a) were included as well for a total of 32 sentences. The full set of sentences can be viewed in Appendix A.

Initial Recordings

Talkers were recorded saying the corpus of words and sentences shortly upon their return to campus. Participants were brought into an Acoustics Systems soundproof booth to be recorded. The task was conducted on a Macbook Pro Laptop using the program Superlab 4.5. The participant sat in front of the laptop and was presented with instructions on the screen while the experimenter read the instructions aloud. After reading the instructions the experimenter would leave and close the door to the sound booth and record the participant. During recordings the participants wore an AKG C-420 microphone headset which was connected to a USBPre 2 Sound Devices recorder. The recordings were collected on a Mac OS X Version 10.9.2 computer through the audio program Sound Studio Version 4.6.11.

In the recording task, the participants were presented with two blocks of words and two blocks of sentences that would alternate between a word block and a sentence block. Each block presented the full set of 254 words and 32 sentences in each respective block. Participants were instructed to read each word and sentence aloud in their normal, clear speaking voice. These recordings were later used for the dialect identification task.

Dialect Identification Task

For this experiment, participants signed up online for monetary compensation.

Participants were run in a soundproof room on a computer using either a Mac OS X Version 10.9.2 computer or a Lenovo ThinkCentre M Series computer running Windows 7 on a Dell Desktop. The experiment was run using Superlab 4.5. Audio was played through Sennheiser headphones. The participants were presented the instructions for the experiment on the screen while the experimenter read the same instructions aloud. After reading the instructions, the experimenter would leave and close the door to the room and the participant was able to leave the room once they finished the experiment.

The design of the dialect identification task replicates the task used by Clopper & Pisoni (2004b). The dialect identification task was presented in four blocks. The first and second blocks were a Recognition phase, the third block was a Test phase, and the fourth block was a Generalization phase. For each block, an audio recording of a sentence from the initial recordings was played and the participant had to determine if the talker was from Northern New Jersey or Southern New Jersey. They answered using the numbers on the computer keyboard (1=Northern New Jersey, 0=Southern New Jersey). In the Recognition phase, the participants heard a set of talkers saying a set of sentences. The talkers and sentences were the same for both blocks. After answering, the participant would receive feedback indicating if the response was correct or incorrect. During the Test phase, the same talkers from the previous blocks were used saying a different set of sentences. The Generalization phase used a new set of talkers saying the same sentences from the recognition phase. For both the Test and the Generalization phases participants were not given feedback about the correctness of their responses.

The experiment was split into ten conditions. Of these ten conditions, five had 12 talkers presenting sets of 4 sentences and five had 4 talkers presenting sets of 12

sentences. These conditions were based on a similar talker condition design by Clopper & Pisoni (2004b). Each talker set was evenly divided between the sex of the talker and the location of the talker. Participants who provided recordings for this experiment were assigned to conditions that did not contain their personal recordings. Participants who did not provide recordings were randomly assigned to a condition.

Results

Analyses were run using the R Statistics program. Data was run through several analysis of variance tests. The data was scored as proportion correct in the dialect identification task.

For the entire dialect identification task there was a significant main effect between the 12 talker condition listeners (M=0.56, SD=0.12) and the 4 talker condition listeners (M=0.67, SD=0.19) ($F(1, 52)=17.24$, $p<0.05$), with the 4 talker condition showing higher identification scores than the 12 talker condition. A significant effect was found across the different block types of Recognition (M=0.63, SD=0.13), Test (M=0.70, SD=0.16), and Generalization (M=0.52, SD=0.13) in the task ($F(2, 104)=38.12$, $p<0.05$), with the Test phase showing the highest scores and the Generalization phase showing the lowest scores. There was an interaction effect between the talker conditions and the block types as shown in Figure 1 ($F(2, 104)=5.83$, $p<0.05$), showing that there was a significant difference between the scores of the two talker conditions in both the Recognition and Test phases. Scores for both talker conditions in the Generalization phase were equivalent.

Insert Figure 1 Here

There was a main effect of talker region in which the identification of Northern talkers (M=0.64, SD=0.15) was greater than that of Southern talkers (M=0.60, SD=0.15) (F=(1, 52)=4.43, $p<0.05$). As shown in Figure 3, a marginal interaction effect was found between the block type and the talker region (F(2, 104)=2.42, $p<0.05$). Listeners were found to be slightly better at identifying Northern talkers than Southern talkers in the Recognition phase and showed no difference in identification scores in the Test and Generalization phases.

Insert Figure 2 Here

A marginal difference was found across talker sex that found listeners to be better at perceiving the dialects of male talkers (M=0.63, SD=0.14) than female talkers (M=0.60, SD=0.16) (F(1, 52)=3.64, $p<0.05$). As shown in Figure 2, there was an interaction effect between the talker sex and block types (F(2, 104)=3.69, $p<0.05$). It was observed that there was no difference in listeners' identification scores in the Recognition and Test phases but identification of male talker dialects was significantly greater than that of the female talkers in the Generalization phase.

Insert Figure 3 Here

Significant differences were found among the Recognition phases of the task. Across the recognition stages (Recognition 1: M=0.59, SD=0.13; Recognition 2: M=0.62, SD=0.18; Recognition 3: M=0.66, SD=0.18; Recognition 4: M=0.68, SD=0.19) there was a significant effect with scores increasing through the progression of the Recognition phase as can be seen in Figure 4 (F(3, 156)=10.06, $p<0.05$).

Insert Figure 4 Here

Discussion

While there was some evidence suggesting people may be able to discriminate between a Northern New Jersey and a Southern New Jersey dialect, there was variation in performance across the phases. Listeners in the 4 talker condition were found to have significantly higher identification scores than listeners in the 12 talker condition in the Recognition and Test phases of the experiment. The Generalization phase, however, did not show a significant difference between the talker conditions.

It was found that listeners overall made more correct identifications of Northern talkers than Southern Talkers. It was also found that listeners were slightly better at identifying Northern talkers than Southern talkers in the Recognition stage. In the Test and Generalization phases, there was no significant difference between the identifications of Northern and Southern Talkers. These findings may suggest that the Northern New Jersey dialect is slightly more identifiable than the Southern New Jersey dialect, however further testing would need to be done to support this finding.

It was found that listeners were slightly better at perceiving dialects in male talkers than in female talkers. Across the block types in the dialect identification task, the scores of male and female talker dialect identification were equivalent. There was, however, a difference in pattern learning across talker sex in the Generalization phase. It was found that listeners were overall better at generalizing male talkers than female talkers. This finding may indicate that males exhibit stronger regional dialects than females.

In the Recognition phase, listeners showed a consistent increase in identification abilities as the task progressed. There was also a noticeable difference between the two

talker conditions. Specifically, listeners in the 12 talker condition had significantly lower identification scores than those in the 4 talker condition. Based on these findings it appears that higher levels of exposure to fewer talkers may increase one's ability to identify a talker's dialect region. Less exposure to more talkers, however, appears to decrease one's ability to identify a talker's dialect region. This serves as evidence that with increased exposure, people are better able to identify a person's regional dialect. The Recognition phases also gave feedback on correctness of answers; therefore these findings may indicate that being informed of a person's regional dialect will increase their ability to correctly identify the same dialect later on.

The current study was a conceptual replication of Clopper & Pisoni (2004b). This study implemented similar methodology to their study on dialect discrimination. Both studies used two conditions with varying amounts of talkers and sentences. The two studies also had a dialect identification task that consisted of multiple Recognition phases with feedback, and one Test and one Generalization phase with no feedback. The current findings support most of the results from this previous research. The current research found similar results in that the Recognition and Test phases with fewer talkers presenting more sentences had higher dialect identification scores than those in the condition with more talkers presenting fewer sentences. Clopper & Pisoni (2004b), however, found that the condition with more talkers presenting fewer sentences had a significantly higher generalization score than the other condition. In the current research there was no significant difference between the talker conditions in the Generalization phase. The current study was only conducted within a state while Clopper & Pisoni (2004b) conducted their study using a nationwide corpus. Further research should be

done to see if this difference in generalizability is due to geographic size or other factors.

This study was also an expansion of the work of Apfelbaum (2013) and his dialect identification task. Apfelbaum (2013) used a predetermined word list and found that people were not able to correctly identify New Jersey residents by their dialect. Based on the findings in the current study that implements improvements upon the previous research design, it appears that having words that specifically exhibit the dialect differences between these two regions of New Jersey increases a person's ability to discriminate. The current research also shows evidence that increased exposure to dialects through the use of full length sentences rather than isolated words also increases one's ability to make dialect discriminations.

Research that studied dialect identification on a global scale found that people were able to make dialect distinctions. Van Bezooijen & Gooskens (1999) found that people were better at making dialect distinctions between different countries than they were at making distinctions between different province dialects. The current research found that people are able to identify regional dialects but only slightly above chance. This supports Van Bezooijen & Gooskens' (1999) findings that it is more difficult to make dialect distinctions between smaller and geographically closer areas.

The current research supports the findings of Kirk et al. (2013). The researchers did a similar dialect identification task with two Scottish dialects and included a familiarization task to ensure participants had some form of exposure to both dialects. Similar to the current findings, Kirk et al. (2013) found that exposure to the dialects prior to the task increased the scores of dialect identification. Exposure to dialects has been found to be beneficial in other experiments as well. Clopper & Pisoni (2006b) had

participants make nationwide dialect discriminations based on sentences and found that listeners who lived in multiple locations were able to identify more dialect variation than those who had only lived in one location. A previous study by Clopper & Pisoni (2004a) found similar results: listeners who had lived in at least three states were better at a nationwide dialect identification task than listeners who had only lived in one state. In the same study the researchers also found that listeners who had lived in a dialect region were better at locating that dialect rather than a listener who had not lived in that state. The findings of the current study, as well as previous research, support the idea that prior exposure to a dialect increases one's ability to identify the location of origin of the dialect.

Clopper & Pisoni (2007) found that people were able to discriminate regional dialects in the United States when allowed to use a free classification system. They found that when given the freedom to decide where the dialect originated, participants were able to make more accurate, discrete classifications than when using a forced-choice answering system. The current research may have benefited from a similar free classification design where participants were able to choose which area of New Jersey they believed the talker was from. A future study using a free classification design may reveal more dialect regions of New Jersey that have yet to be identified.

The findings show that listeners had higher dialect identification scores among male talkers rather than female talkers during the Generalization phase. This may lend itself as evidence that sex and gender have an influence on the prominence of a regional dialect in a person's speech. Clopper, Levi, & Pisoni (2006) found that listeners were aware of talker gender in the experiment. The study asked talkers to determine if talker

pairs were from the same or different dialect regions. It was found that listeners made more correct dialect distinctions when presented with same-sex talker pairs than mixed-sex talker pairs. The current findings also support those of Eckert (1989) who found that males exhibit more speech patterns of their regional dialect than females. Eckert (1989) overall found that males exhibit more recent dialect changes than females. It would be interesting to conduct further analysis to see if a similar pattern is found from the current research.

Although it was not examined in the current study, it has been found that other demographic features can influence one's dialect. Labov (1966) found that post-vocalic /r/ in New York City was mostly dropped by minorities and people of lower socioeconomic status. Further research and data analysis could be done to see if there is an effect of the influence of demographic factors on regional dialects.

Limitations and Future Research

There were several limitations within this study. Certain dialect qualities mentioned in previous research were not included in the word corpus, for example the fronting of /o/ (*boat*) in the Philadelphia dialect (Labov, Ash, & Boberg, 2006; Labov, Rosenfelder, & Fruehwald, 2013). An expanded corpus containing all vocalic phonemes would give a more thorough discrimination task and provide further insight on which vocalic phonemes are perceived as different between the Northern and Southern New Jersey dialects.

This dialect identification ability was not found to be generalizable in this study. Participants were able to discriminate dialects in the Recognition phases and the Test phase of the listening task, however they were not able to do so in the Generalization

phase. This leads to the possibility that participants were not able to identify dialect differences but instead were discriminating individual talkers. Future studies should utilize a methodological design that would reduce the chance of listeners classifying by individual talker and increase the likelihood of one classifying talkers by dialect.

New Jersey is a very diverse state and exposure to different cultural dialects may have influenced the dialect of the recording participants. Participants may have parents who are not from the United States and may have been influenced by their dialects while home for school break. Participants may have been with friends who were not from Northern or Southern New Jersey, respectively, while on break. The town where participants are from may also have a large population from outside New Jersey. All of these factors may have influenced participants' dialects prior to recording.

The researchers could not be completely sure that participants had recently returned to school and had not had excessive exposure to an opposing dialect which may have influenced their speech patterns. This was mainly a concern for participants from Southern New Jersey who may have returned to school more than a few days before the start of term. The location of campus is in Northern New Jersey and has a large population of students from Northern New Jersey so there was less concern about Northern New Jersey talkers' dialects being influenced by someone from Southern New Jersey. Participants from both regions, however, may have been exposed to dialects outside of New Jersey which could also have an influence on their dialect.

Weather also posed a problem during this study. There was inclement weather when the researchers began their initial recordings and the establishment was closed multiple times. Many participants had to reschedule a week or even later after their

original appointment which could have led to their original regional dialect being influence by their acquaintances.

It is also possible that the formal setting of the recordings could have led to what Clopper & Pisoni (2006) called "lab speech." Participants were reading scripted sentences which will sound different from their everyday speech. This could have been improved by pulling sentences from a recording of a normal conversation, however it would have been difficult to get sentences that would be consistent across participants.

Participants in both the recording sessions and the listening task may have become fatigued during their sessions. Both sessions were conducted in isolated rooms that were slightly warm. The sessions were also somewhat tedious, leading some participants to feel tired while doing the tasks.

Due to the small amount of previous research in dialect identification of two regions, it is difficult to make the findings generalizable to the population at large. Further research of not only New Jersey but other regions could lead to stronger support of the ability to discriminate between two dialect regions.

Clopper & Pisoni (2004a, 2006b) found that people are better at identifying talkers from their own residential region. It would be interesting to see if residents from Northern New Jersey are better at identifying talkers from their region and vice versa. Further research could also study listeners who have been residents of both areas. It has been found that people who have lived in multiple states are better at identifying dialects (Clopper & Pisoni, 2004a, 2006b) and it would be interesting to see if this would work on the smaller scale of regional dialects. It is also possible that individual talkers exhibited varying levels of regional dialect markers in their speech. Listeners may have had overall

higher scores for talkers who exhibited more dialect markers than talkers who exhibited more neutral dialects. Further analysis of the data could examine if there was pattern in dialect identification of individual talkers across listeners.

Dialect identification could also be used in other fields of psychology, such as social psychology. As shown in previous research, dialects were associated with socioeconomic status, race and ethnicity, sex and gender, and education (Clopper, Levi, & Pisoni, 2006; Eckert, 1989; Labov, 1966). Research on dialect influence on judgments, especially stereotypes, could possibly show how multiple factors affect or are perceived to affect a person's dialect.

Future research may want to study the differences between Northern and Southern New Jersey and the respective regions that influence them. While previous research has found that these two regions of New Jersey are influenced by New York City and Philadelphia, respectively (Labov, Ash, & Boberg, 2006), there may be dialect differences between those regions that we are not aware of yet. There may be dialect similarities within New Jersey that are not present in the New York City or Philadelphia dialects. There are many factors that influence a person's dialect and there is certainly more areas of this topic that can be explored.

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1. The *father got* into the *car*.

2. *There* is *where* the *ferry* docks.

3. Did you *hear* about the *reindeer* who was found wandering the *pier*?

4. At the *bar* you can play a *dart* or *card* game.

5. The *mauve shawl got caught*.

6. You should *chuck* the ugly *rug*.

7. That *chick was* on *pitch*.

8. She *got* a *badge* for being good in *math* but it turned out to be a *sham*.

9. The *deaf chef* cooked *hen* very *well*.

10. The *pudgy duchess was* missing some *culture*.

11. The *misfit* in the *kitchen was guilty* of poor *fitness*.

12. A *camera* is a *classic* way to *baffle* people with *magic*.

13. The *cement helmet* the *bellhop* wore *was* not very useful.

14. The *youthful, smooching student* started a *foolish rumor*.

15. *Watch* the *fawn kneel* on the *beach*.

16. He *will cheer* during the team *huddle*.

17. She tried to *dislodge* the *berry*.

18. *Can* you *park far* from the *ledge*?

19. When he *was caught* for *fraud* he acted very *aloof*.

20. The *chef* at the *bar* couldn't *finish* his drink.

21. *There was* a *furry reindeer* eating a *leaf*.

22. The *teacher* wore a *jaunty badge*.

23. He **caught** a **fish** with a **lure**.

24. They want to **marry** in a **hurry**.

25. She **can borrow** the **ferry** today.

26. Open the **latch** on the **locket**.

27. The child would **fidget** when he tried to **fasten** the **toggle** on his coat.

28. The **student had** to eat **ham** on her **cot**.

29. They were **merry** as they sat on their **chairs**.

30. **Will** you **pitch** a tent at the **concert**?

31. She had your dark suit in the **greasy wash** water. (Clopper & Pisoni, 2004a)

32. Don't **ask** me to carry an oily rag like that. (Clopper & Pisoni, 2004a)
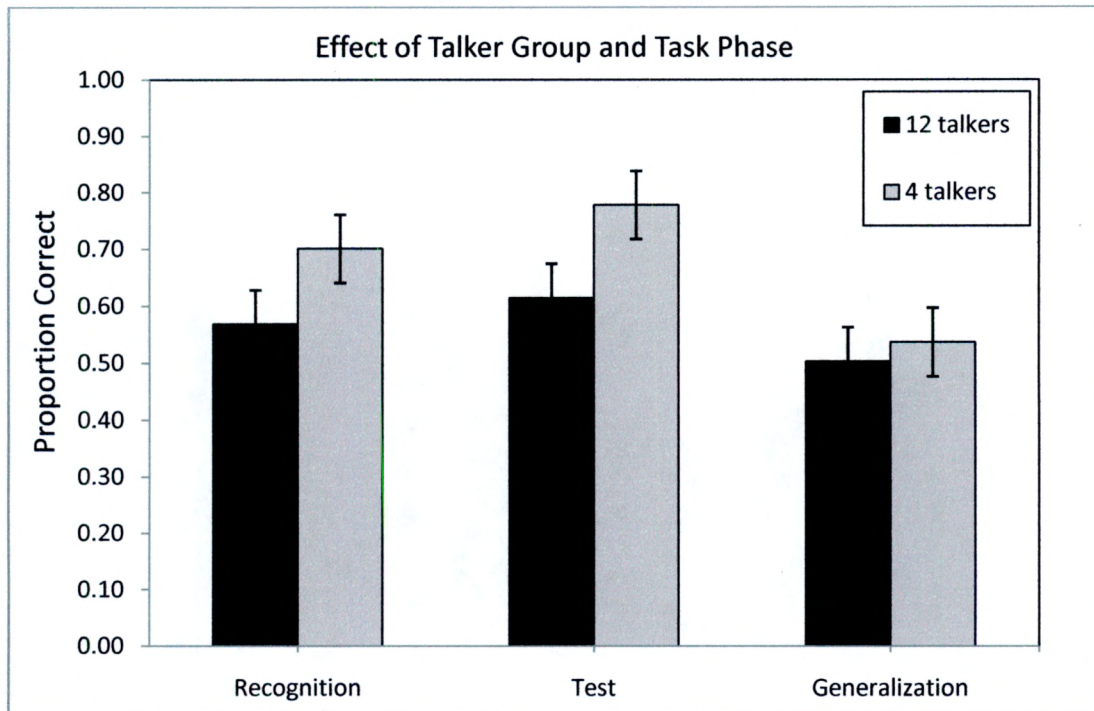
Figure 1: This graph represents the interaction between the talker

conditions and the phases of the dialect identification task. It was observed

that the 4 talker condition was significantly better than the 12 talker

condition on the Recognition and Test phases. There was no significant
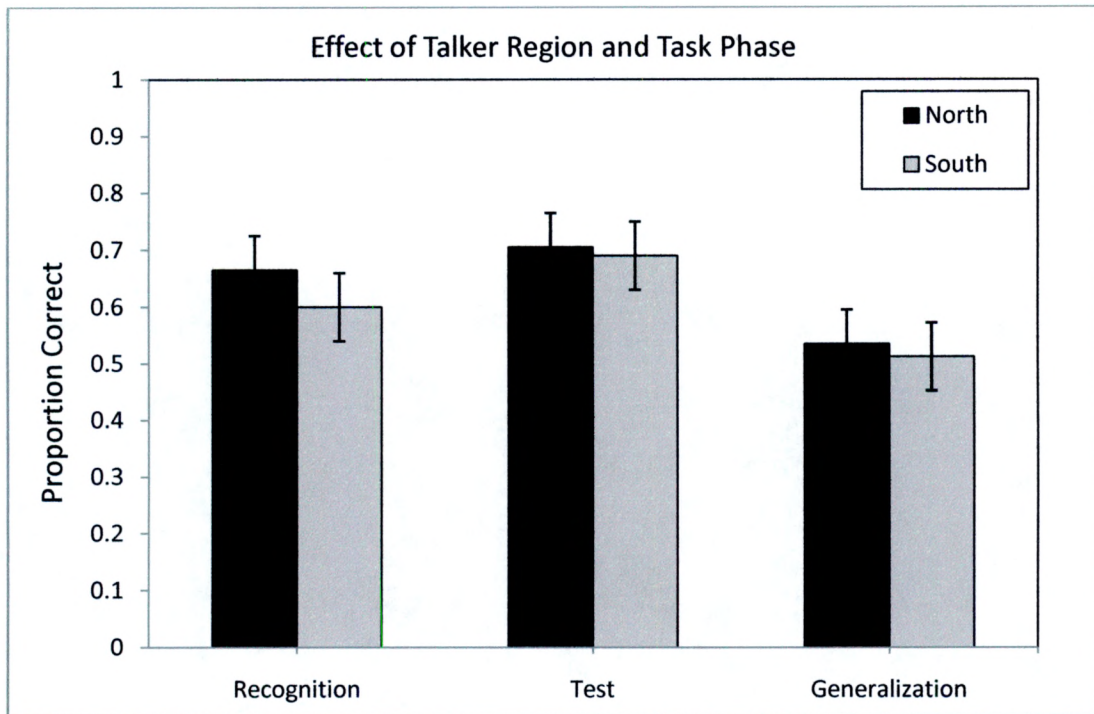
difference between conditions in the Generalization phase.

Figure 2: This graph shows the interaction effect between the region of the talker and the phases of the dialect task. Identification of Northern talkers was significantly greater than that of Southern talkers in the Recognition phases. There was no significant difference between talker region identification in the Test or Generalization phases.

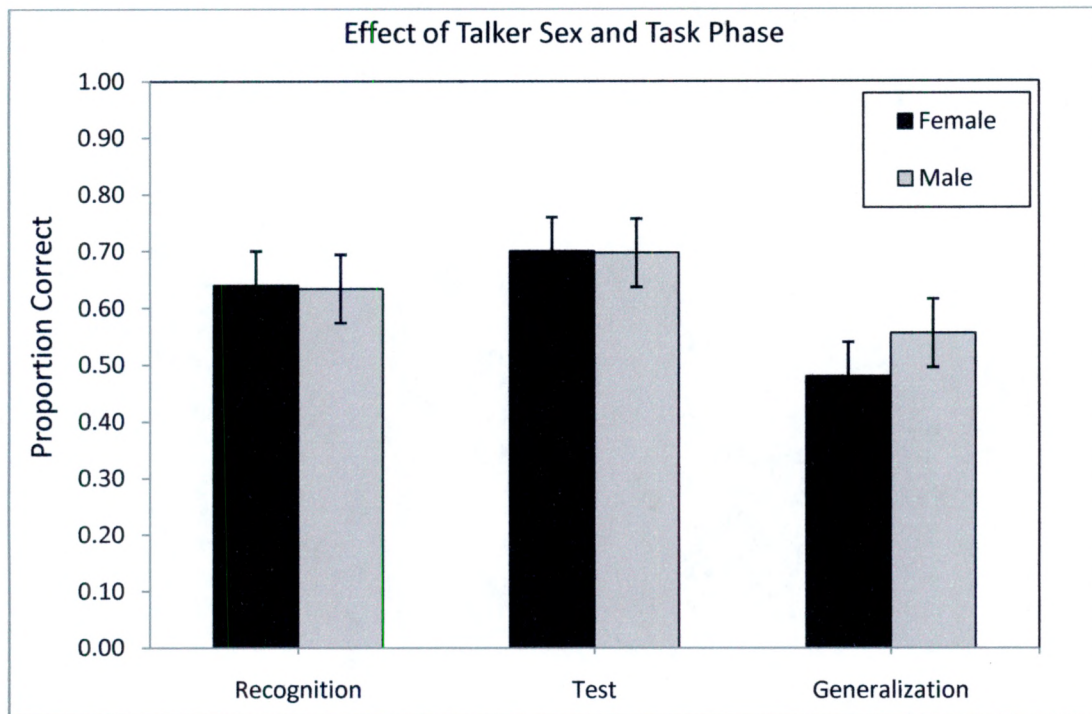**Effect of Talker Sex and Task Phase**

Figure 3: This graph shows the interaction effect between talker sex and the phases of the dialect task. No significant difference was observed between talker sexes in the Recognition or Test phases. Identification of male talker dialects was significantly greater than female talker identification in the Generalization phase.
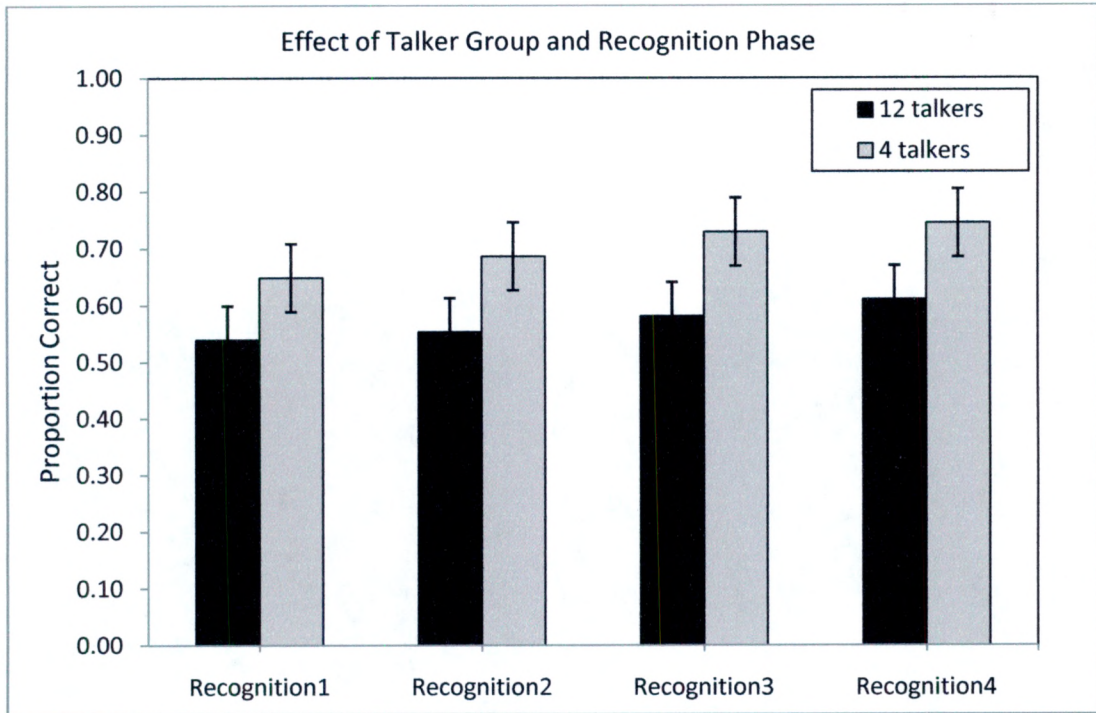
Figure 4: This graph represents the scores of listeners on each stage of the Recognition phase. It can be seen that the increase in identification scores is parallel across the talker conditions.